OFFICIAL

3-7-01

IN THE SPECIFICATION:

Please replace the paragraph beginning at column 2, line 31 with the following rewritten paragraph:

--Automated storage libraries include a plurality of storage cells or slots for retaining data storage media, such as magnetic tapes, magnetic disks, or optical disks, a robotic picker mechanism, and one or more internal peripheral storage devices. Each data storage medium may be contained in a cassette or cartridge housing for easier handling by the picker. The picker operates on command to transfer the data storage media between the storage cells and the internal peripheral storage devices without manual assistance. An internal peripheral storage device having a storage medium mounted therein is referred to as "occupied". Once a data storage medium is mounted in an internal peripheral storage device, data may be written to or read out from that medium for as long as the system so requires. Data is stored on a medium in the form of one or more files, each file being a logical data set. A file is considered "open" when it is reserved for access by a particular user and the storage medium upon which it resides is mounted in a peripheral storage device and ready to be accessed. For example, in an optical disk library, a file is open if it is reserved for exclusive access and the disk on which it resides is mounted in a drive and spinning. A peripheral storage device having a storage medium therein with an open file is referred to as "active", regardless of whether actual electronic transfer is occurring. A peripheral

A1

storage device is also active if the storage medium mounted therein is undergoing access under any standard operating system command not requiring that a file be open, such as a directory read. An active storage medium is generally considered to be one in an active peripheral storage device. The internal peripheral storage devices and storage cells may be considered distinct levels of the storage hierarchy. In addition, data storage media in shelf storage (i.e. not in the storage cells, but instead outside the reach of the robotic picker without manual intervention) may be considered yet another level of a data storage hierarchy.--

A1

Please replace the paragraph beginning at column 8, line 27 with the following rewritten paragraph:

--A generic library file server (GLFS) 50 controls the library with a set of generic, intermediate hardware commands through a formally defined interface which will be described later herein. Data is manipulated by GLFS 50 at the logical record level allowing for data access in quantities spanning from a single byte to complete, variable length data objects. An operating system 51 mediates the flow of control and directs incoming operating system commands from the external interfaces into the library subsystem. Operating system 51 can be any of several known operating systems and in the preferred embodiment is the OS/2 operating system. The use of the OS/2 operating system generally allows for control of library 1 through standard fixed disk operating system commands. Library control is

A2

directed through a unique command, DosFsCtl. This command is used to support initialization, entry/exit of an optical disk from library 1, read/store the library map file, mount/demount an optical disk in drive 10, enable/disable virtual drive option, etc. Drive control is directed through a unique command, DosDevIOCtl. The remainder of the programmed control for library 1 is retained in microcode which is uploaded into the main memory of the system controller 17 from a storage medium resident therein at initialization. In alternative embodiments, some function required to support the microprogrammed control may also be provided as a utility to the operating system running in the system processor 30. --

A2

Please replace the paragraph beginning at column 9, line 29 with the following rewritten paragraph:

-- The upper interface translator 80 is responsible for translating between upper interface commands and those of GLFS 50. The lower interface translator 90 is responsible for translating between the commands issued by the GLFS 50 and those of the lower interface. Translators 80 and 90 are each implemented as distinct linkable modules with clearly defined interfaces, thereby permitting easy attachment of library 1 to new upper and lower interfaces. The only impact of attachment to a new interface is the creation of a new portion of translators 80 and 90 - the generic nature of GLFS 50 allows it to remain unchanged. --

A3

Please replace the paragraph beginning at column 22, line 3 with the following rewritten paragraph:

--Referring to FIG. 19, the periodic review of the activities of drives 4 to determine if the optical disk in any of the occupied drives 4 is sufficiently idle as to be preemptively demounted begins with the periodic interruption of console 11 at step 600. In the preferred embodiment, console 11 is interrupted every 10 seconds. The interrupts are issued without regard to the status of library 1 with respect to FIGS. 8-15. At step 601, branching occurs according to the activity status of drives 4 as in step 362, except that the preemptive demount eligibility time X is replaced with a relatively much larger idle demount time Y. If no drive 4 has been inactive for time Y, the flow returns at step 605. Note that because the time Y is much greater than the time X, the determination not to preemptively demount at step 601 has little, if anything, to do with the risk of churn.--

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Please replace the paragraph beginning at column 22, line 19 with the following rewritten paragraph:

--If at step 601 any drive has been inactive for time Y, the DEMOUNT routine is called at step 602 to preemptively demount all optical disks mounted in any such inactive drive 4 before proceeding to step 605. The existence of a drive 4 that has been inactive for time Y is considered to be an indication that library 1 is relatively idle. Idle periods may occur during periods of low overall system use, such as nights and weekends in some data processing systems. At such times, it is not desirable

A5

to continue to spin the optical disks in drives 4. So long as disks are spinning, the lasers in drives 4 will continue to follow the tracks on the disks, resulting in needless servo action. The drive motors and lasers will work to maintain drives 4 in a state of readiness even though no useful work is being performed, thereby prematurely aging the drives 4. Note that preemptive demounting here applies to all optical disks mounted in such inactive drives, not just the least recently used disk, as the need to reduce aging of the drives is considered to outweigh the need to maintain disks on-line when library 1 is relatively idle. Thus, by preemptively demounting certain disks during relatively idle periods, the reliability of library 1 is improved. In an alternative embodiment, the reliability of library 1 could be improved by spinning down such disk without their being demounted and returned to their home storage cell 3.

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